REMARKS

Applicant respectfully requests reconsideration of this application as amended. Claims 1-6, 8-17, 19-23 and 26-31 are currently pending in this application. Claims 1, 6, 8, 9, 10, 12, 17, 19, 20, 23, 25, 26, 30, and 31 have been amended. Support for the amendments may be found at least in paragraph 23 on page 8 of the application as originally filed.

Claim Objections

Claims 1-6, 8-17, 19-23, and 25-31 are objected to as incorporating both general and specific definitions of the claimed search area. Without admitting to the validity of the objection and to further prosecution, Applicant has amended independent claims 1, 12, 20, and 26 by canceling subject matter directed to the height of the search area and incorporating the subject matter into the claimed search area. Applicant respectfully requests that the Examiner withdraw the objections.

Rejections under 35 U.S.C. §103

Claims 1-6, 12-17, 20-23, and 26-30

Claims 1-6, 12-17, 20-23, and 26-30 stand rejected as being obvious in view of Sohn (2003/0202592), Carlbom (2003/0033318), and Guo (6,353,678). Applicant does not admit that Sohn is prior art and reserves the right to challenge the reference at a later date.

Sohn teaches a system in which frames of video data may be encoded using disparity vectors, motion vectors, or both. When encoding with disparity vectors, a disparity vector is generated from a reference frame in conjunction with a destination frame. When the frame is subsequently decoded, the reference frame is used in conjunction with the disparity vector to recreate the destination frame.

Carlbom teaches tracking the flight of a ball across multiple cameras. Once Carlbom identifies the location of the ball, Carlbom dynamically shrinks the size of the search region and relies upon the velocity of the ball and the known physical coordinates of the cameras to continue tracking the ball.

Guo teaches computation of constrained epipolar transformations for image pairs. Constraints are iteratively tightened for objects in motion in a three dimensional scene.

Claims 1, 12, 20, and 26, as amended, recite searching for matching pixels in a second frame based on a first area around an epipolar line, where the first area is defined by a vertical distance from the epipolar line. The vertical distance is specified by a correlation between compression efficiency and semantic accuracy specified by a user. The matching pixels in the second frame are for subsequent use in computing a motion vector for the selected pixels in the first frame. The motion vector is transmitted as part of a compressed representation of the first frame. A third frame is searched for matching pixels based on a second

correlation, the value of the second correlation different from the value of the first area and the second correlation also specified by the user.

The Examiner takes the position that it would be obvious to combine the epipolar constrained motion estimation taught by Carlbom to obtain the motion vectors taught by Sohn in order to have an "efficient" estimation method as suggested by Carlbom in paragraph 92. However, the search efficiency referred to by Carlbom in paragraph 92 is not the "efficient compression" of the claimed correlation between efficient compression and semantic accuracy. Rather, Carlbom is referring to the efficiency gain by searching for a flying ball in one of two cameras tracking the ball rather than in both. The claimed "efficient compression" refers to a reduction in bit rate of encoded data for subsequent transmission as described in paragraphs 40 and 41 on page 15 of the application as originally filed. Thus, Carlbom's "efficient search" does not teach the claimed "efficient compression." Therefore, claims 1, 12, 20, and 26 are patentable over Carlbom. Sohn and Guo also fail to teach or suggest a first correlation between efficient compression and semantic accuracy specified by a user. Thus, claims 1, 12, 20, and 26 are patentable over the combination as well.

The Examiner also acknowledges that Carlbom, Sohn, and Guo all fail to teach or suggest the claimed constrained search area defined by a correlation between efficient compression and semantic accuracy. Instead, the Examiner takes the position that such a compromise is inherent in any constrained search. In relying upon the theory of inherency, the Examiner must provide a basis in

fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. (MPEP 2112 (IV)).

The Examiner has rejected the claimed constrained search range with Carlbom's ball-tracking search. Carlbom dynamically "constrains" the search range in response to the precision with which Carlbom is tracking the ball. Carlbom is not compressing the data, but rather is analyzing the content of the data to generate metadata, namely, the position of the ball over time. It is not reasonable to read an inherent compromise between efficient compression and semantic accuracy into the changing size of Carlbom's search window, since Carlbom is interested in neither compression efficiency nor semantic accuracy. Accordingly, the inherency argument is improper. A compromise between efficient compression and semantic accuracy as claimed is not inherent in the combination of Carlbom, Sohn, and Guo.

MPEP 2141.01(a) II states the similarities and differences in structure and function of inventions carry far greater weight than classification of references in determining whether art is analogous. The function of the epipolar-constrained search range is to track an element of content with video data, such as a ball. This is significantly different than the claimed search range constrained by a compromise between efficient compression and semantic accuracy. For this reason, Carlbom is not analogous art.

For the foregoing reasons, Applicant respectfully submits that claims 1, 12, 20, and 26 are patentable over the combination of Carlbom, Sohn, and Guo.

Claims 8-11, 19, 25, and 31

Claims 8-11, 19, 25, and 31 stand rejected as being obvious in view of Sohn, Carlbom, Guo, and Newman (6,154,600).

Newman teaches a user interface that allows users to modify parameters of an imaging processing application.

Claims 8-11, 19, 25, and 31 depend upon claims 1, 12, 20, and 26 which are patentable over Sohn, Carlbom, and Guo for the reasons stated above. Newman fails to correct the shortcomings of Sohn, Carlbom, and Guo because Newman fails to teach a search area constrained by a correlation between compression efficiency and semantic accuracy. Accordingly, claims 8-11, 19, 25, and 31 are patentable over the combination of Sohn, Carlbom, Guo, and Newman. Applicant respectfully requests that the Examiner withdraw the rejections.

SUMMARY

Applicant respectfully submits that in view of the foregoing amendments and remarks, the pending claims are in condition for allowance.

If the Examiner determines that the prompt allowance of these claims can be expedited by a telephone conference, the Examiner is invited to contact Joe Sosinski at (408) 962-7585.

Respectfully submitted,

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